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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,875	10/15/2001	Christopher D. Eckhoff	75622.P0048	3782

7590 08/15/2005

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EXAMINER	
JAMAL, ALEXANDER	
ART UNIT	**PAPER NUMBER**
2643	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/977,875	ECKHOFF ET AL.	
	Examiner	Art Unit	
	Alexander Jamal	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Based upon the submitted amendment (6-22-2005), the examiner notes that Fig. 1 has been amended.

2. Examiner withdraws objection to Fig. 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1,2** rejected under 35 U.S.C. 102(b) as being anticipated by Apfel (5619567).

As per **claim 1,** Apfel discloses a variable DC feed characteristic for a SLIC that switches from a normal mode 401 to a modified mode 402 DC feed (Fig. 4). The normal mode is switched to the modified mode when Vab is less than or equal to threshold B. The mode is switched back to the normal mode at threshold E.

As per **claim 2,** curve 401 (APFEL: Fig. 4) is linear, defined by VBAT-Voff1, and has a slope corresponding to an impedance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 3-5** rejected under 35 U.S.C. 103(a) as being unpatentable over Apfel (5619567) as applied to claim 1.

As per **claim 3,** Apfel uses an open circuit voltage value (VBAT-Voff1), two relative thresholds (B,E), and a target voltage (VBAT-Voff3) to define linear portions 401,402. However APFEL does not specify using a target open circuit voltage in defining the load line.

Since the impedance (slope) of the modified characteristic (402 in Fig. 4) is the same as the unmodified characteristic 401, the line could be defined by any current/voltage point (open circuit or loaded) relative to VBAT-Voff1 and still obtain the same characteristic curve. It would have been obvious to one of ordinary skill in the art at the time of this application to define the characteristic 402 with any voltage/current relative to the characteristic 401 as a matter of design choice.

As per **claim 4,** claim rejected for same reasons as claims 2,3. The impedance (slope) of both curves is equal (Fig. 4).

As per **claim 5,** Apfel (Fig. 1b) discloses the impedance (slope) is 400 ohms (approximately 320 ohms).

7. **Claims 6-12** rejected under 35 U.S.C. 103(a) as being unpatentable over Apfel (5619567), and further in view of Zhou (5878133).

As per **claim 6,** Apfel discloses claim 6 for the same reasons as the rejection of claim 1. However, Apfel does not disclose using programmable registers to hold the variables that define the characteristic curve.

Zhou teaches a Digital Direct Current Feed control for a SLIC that uses registers to store values that define a characteristic feed curve (Col 7 lines 10-55). It would have been obvious to one of ordinary skill in the art at the time of this application to digitally implement as much of the SLIC circuitry as possible for the advantage of providing a more easily manufactured product.

As per **claim 7,** Zhou discloses a DSP.

As per **claims 8,9,** claim rejected for same reasons as claim 2-4.

8. **Claim 10** rejected under 35 U.S.C. 103(a) as being unpatentable over Apfel (5619567) and Zhou (5878133) as applied to claims 6,9.

As per **claim 10,** Apfel in view of Zhou uses digital registers to store values used to define a characteristic curve. Apfel uses an open circuit voltage value (VBAT-Voff1), two relative thresholds (B,E), and a target voltage (VBAT-Voff3). However APFEL does not specify using a target open circuit voltage in defining the load line.

Since the impedance (slope) of the modified characteristic (402 in Fig. 4) is the same as the unmodified characteristic 401, the line could be defined by any current/voltage point (open circuit or loaded) relative to VBAT-Voff1 and still obtain the same characteristic curve. It would have been obvious to one of ordinary skill in the art at the time of this application to define the characteristic 402 with any voltage/current relative to the characteristic 401 as a matter of design choice.

As per **claim 11,** claim rejected for same reasons as claims 10. The impedance (slope) of both curves is equal (Fig. 4).

As per **claim 12,** Apfel (Fig. 1b) discloses the impedance (slope) is 400 ohms (approximately 320 ohms).

Response to Arguments

9. Applicant's arguments filed 6-22-2005 have been fully considered but they are not persuasive.

As per applicant's arguments that APFEL does not disclose using two distinct voltage thresholds to switch the DC feed mode (remarks pages 3-6), examiner notes Fig. 4 points E and B of APFEL that disclose two voltage thresholds. Examiner reads a current threshold as a voltage threshold across a resistance (such as the loop resistance). Examiner also reads detecting a current the same as detecting a voltage since the instant

resistance is the same for both potentials. Examiner further notes the equation V=IR and as such any current thresholds are equal to a voltage threshold divided by a resistance (such as the loop resistance). Furthermore, Apfel notes the well known relationship between voltage and current (Col 3 lines 35-60).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

AJ
August 9, 2005

CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
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